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Document Structure

Introduction

This document supplements the Alaska State Crime Laboratory Quality Assurance Manual. The guidelines and procedures in this manual are additional, Latent Print Discipline specific information.

The numbering scheme in this document follows that of the Alaska State Crime Laboratory Quality Assurance Manual. Supplemental requirements are found in Sections 4 and 5 of this document. Additional requirements in Sections 4 and 5 are listed by the Quality Assurance Manual criteria point they address. In Sections 4 and 5, the phrase "*Nothing additional*" means there is nothing additional to the requirements listed in the Laboratory Quality Assurance Manual.

Abbreviations

1°	First Level Detail
2°	Second Level Detail
3°	Third Level Detail
10P	Ten Prints or Ten Print Card
=	Control Negative
+	Control Positive
#	Number
ø	Identification
AAFIS	Alaska Automated Fingerprint Identification System
AB	Amido Black
ACE-V	Analysis, Comparison, Evaluation, Verification
AFIS	Automated Fingerprint Identification System
ALS	Alternate Light Source
APIS	Alaska Palm Identification System
APSIN	Alaska Public Safety Information Network
ACE-V	Analysis, Comparison, Evaluation, Verification
B	Blue
BP	Black Powder
BTN	Bearing the Name
CA	Cyanoacrylate Ester (Superglue)
Cal	Caliber
CON	Control
CON=	Control Negative
CON+	Control Positive
CV	Crystal Violet
DAB	Diaminobenzidine
DET	Detected
DEV	Developed
DFO	Diazafluoren-9-One
DOB	Date of Birth
DL	Driver's License
ELIM	Elimination
ENV	Envelope
EVID	Evidence
ET	Evidence Tape
FLS	Forensic Light Source
FP	Finger Print
G	Green
GWL/OF	Green Wavelength Light with Orange Filter
HC	Hard Copy
IAFIS	Integrated Automated Fingerprint Identification System (FBI system)
ID	Identification
IMP	Impression
IN	Insufficient
INC	Inconclusive
IND	1,2-Indanedione

L#	Lot Number
LCV	Leucocrystal Violet
LI	Left Index Finger - Number 7
LL	Left Little Finger - Number 10
LM	Left Middle Finger - Number 8
LOV	Latents of Value
LP	Latent Print
LP/NV	Latents Present/No Value
LR	Left Ring Finger - Number 9
LT	Left Thumb Finger - Number 6
M:	Marked
MBD	7-pMethoxybenzylamino-4-nitrobenz-2oxa-1,3diazole
MENV	Manila Envelope
MP	Magnetic Powder
NA	Nothing Additional
NAQ	Not AFIS Quality
NEG	Negative
NFE	No Further Enhancement
NFRDD	No Further Ridge Detail Developed
NID	No Identified / No Identification
NRD	No Ridge Detail
NSRDD	No Suitable Ridge Detail Developed
NSRDP	No Suitable Ridge Detail Present
NV	No Value
NVRDD	No Visible Ridge Detail Developed
NVRDP	No Visible Ridge Detail Present
O	Orange
PD	Physical Developer
POW	Powder
PREV	Previous
PROC	Processed, processing
Pu	Purple
R	Red
R6G	Rhodamine 6-G
RAM	Rhodamine, Ardrox and MBD
RD	Ridge Detail
RET	Retained
REV	Reversed
RI	Right Index Finger - Number 2
RL	Right Little Finger - Number 5
RM	Right Middle Finger - Number 3
RR	Right Ring Finger - Number 4
RT	Right Thumb Finger - Number 1
RXN	Reaction
S/N	Serial Number
SRDD	Suitable Ridge Detail Developed
SRDP	Suitable Ridge Detail Present
SSN	Social Security Number
STDS	Standards

SUFF	Sufficient
T	Teal
T/S	Tape Sealed
UNS	Unsuitable
UV	Ultraviolet Light
V	Value
VIS	Visual Examination
VRDD	Visible Ridge Detail Developed
VRDP	Visible Ridge Detail Present
W	White
w/	With
WIN	Western Identification Network
WMP	Magnetic Powder - White
WP	White Powder
WWb	Wetwop - Black
WWw	Wetwop - White
Y	Yellow
ZC	Zinc Chloride

4 Management requirements

4.1 Organization

Nothing additional

4.2 Management System

Nothing additional

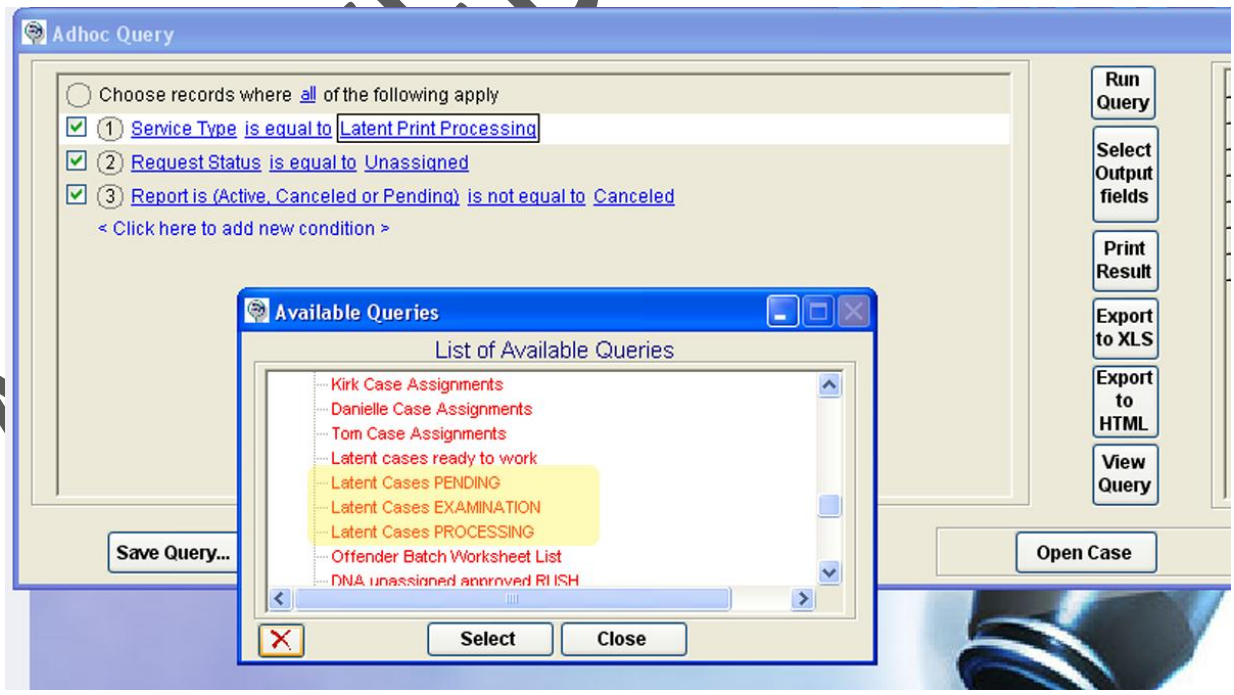
4.3 Document Control

Nothing additional

4.4 Review of requests, tenders and contracts

4.4.1 The Latent Print Discipline Supervisor or designee reviews Request for Laboratory Services Forms and assigns casework to discipline analysts using the following steps.

The three adhoc queries used for case assignments are found in the list of available queries in the JTRAX Adhoc Query window shown in the screen shot below.



The simplest request to assign is a Latent Print Examination request.

The **Latent Cases EXAMINATION** query will bring up all unassigned Latent Print Examination requests created after request items have been processed for latent prints. The majority of these unassigned Latent Print Examination requests are created by a Laboratory Technician who processed the request items. Latent Print Examination requests are ready for assignment to a Latent Analyst.

LATENT CASES PENDING QUERY

The **Latent Cases PENDING** query will bring up all Pending Latent Print requests.

Latents Pending requests are created by evidence staff.

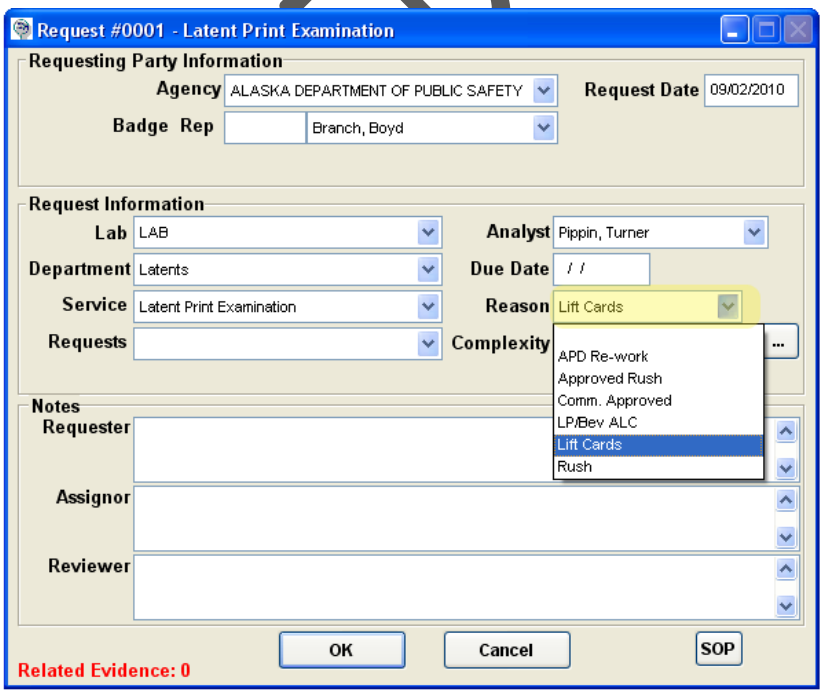
Open the RLS associated with each Latents Pending request.

If Latent Print analysis is the only type of analysis listed for case items, the request can be assigned using the following guidelines:

If the RLS indicates the items need to be processed for latent prints, the Latents Pending request is flipped to a Latent Print Processing request if assigned to a Laboratory Technician or the Latents Pending request is flipped to a Latent Examination request if assigned to a Latent Analyst.

If the RLS indicates there is no processing required (e.g. the items submitted are Lift card or photographic evidence), the Latents Pending request is flipped to a Latent Print Examination request and assigned to an Analyst in the Latent Print discipline. If the case only has lift cards, "**Lift Cards"** should be selected under **Reason** in the request window in JTRAX. This is shown in the screen shot below.

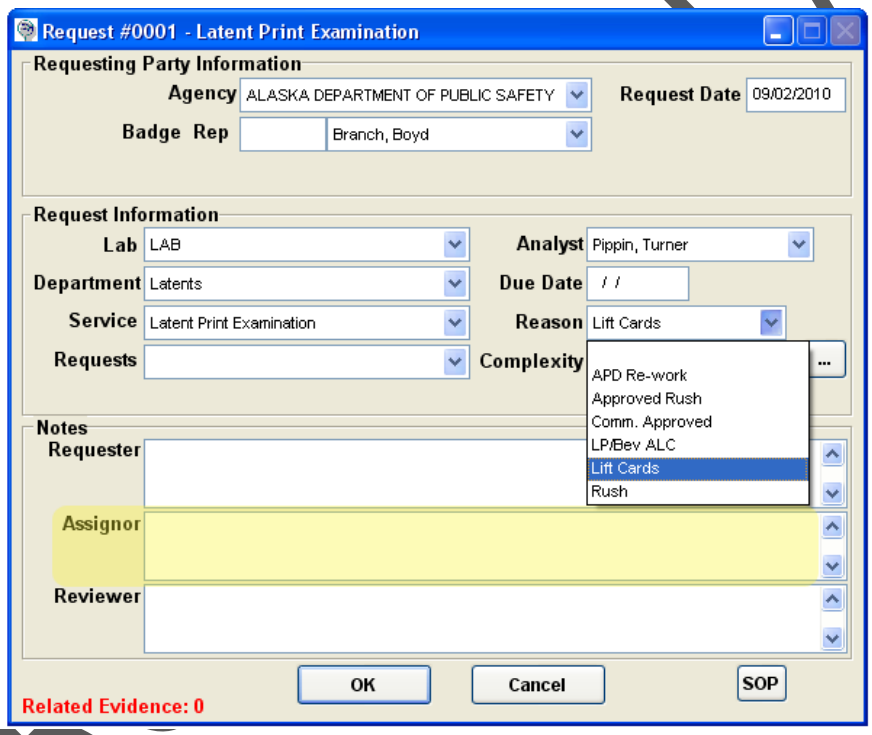
REQUEST WINDOW



Drugs, Arson and Biological Screening process items before Latent Prints. If Drugs, Arson or Biological Screening is requested for items that also have latent print work requested, the case is not assigned to a Latent Print Analyst until the other disciplines have completed their work.

DRUG or ARSON/LATENT CASES

When the Drug discipline is finished working a case, the Drug Analyst will "flip" the Latents Pending request to a Latent Print Processing request. The **Latent Cases PROCESSING** query will bring up all unassigned Latent Print Processing requests created by the Drug Discipline. Before these requests are assigned, the Drug report should be reviewed and a note of which items were worked by the Drug discipline should be made in the **Assignor** notes box on the request window. This notes box is shown in the screenshot below.



The Assignor notes box is also where any notes to the Laboratory Technician or Latent Print Analyst are entered. These notes could include a court date information, communication from the submitting agent, etc. Any information that the Case Assignor thinks the Assignee will need should be entered in the Assignor notes box.

BIOLOGICAL SCREENING/LATENT CASES

If a case has Biological Screening and Latent Print Processing assigned, review the RLS to see what type of screening is requested. If only Contact DNA swabbing and Latent Print processing is requested, the case is ready to be flipped to a Latent Examination request and assigned to a Latent Print Analyst. If Contact DNA swabbing AND other Biological Screening is requested for the case, check with the Supervisor of the Biology Discipline to clarify which discipline will do the contact DNA swabbing. A note should be put in the Assignor Notes box advising who will do the Contact DNA swabbing (e.g. "Latent Analyst to swab items 3, 4 and 6 prior to Latent Processing" or "Screening Discipline will swab for contact DNA").

Again, do not assign a case to a Latent Analyst until Biological Screening has completed their work on Biological Screening/Latent Processing evidence items.

4.4.2 *Nothing additional*

4.4.3 *Nothing additional*

4.4.4 *Nothing additional*

4.4.5 *Nothing additional*

4.5 Subcontracting of tests and calibrations

Nothing additional

4.6 Purchasing services and supplies

4.6.1 *Nothing additional*

4.6.2 Initial control testing of Rhodamine, Ninhydrin and other chemicals mixed at the laboratory is noted in the CHEM INV Excel Spreadsheet for each batch.

4.6.3 Purchasing documents will be saved online in the Uncontrolled Documents, Latent_Share,Orders folder.

4.6.4 The Latent Discipline does not have any critical consumables.

4.7 Service to the Customer

Nothing additional

4.8 Complaints

Nothing additional

4.9 Control of nonconforming testing and/or calibration work

Nothing additional

4.10 Improvement

Nothing additional

4.11 Corrective Action

Nothing additional

4.12 Preventive Action

Nothing additional

4.13 Control of Records

4.13.1.1 Latent print notes are printed to the JTRAX printer and then imported into JRTAX as a tif file.

4.13.1.2 Digital photos and/or scans for Latent Print casework are stored online in the PHYSICAL SECTION IMAGES folder. Inside this folder are two folders: Evidentiary Images and Work Product Images. Original images for cases are stored in the Evidentiary Images folder. Enhanced images and images to note Identifications, Comparisons and Verifications for cases are stored in the Work Product folder. Other documents such as scans of APSIN records, scans of ten print cards, etc. for cases are stored in the Work Product folder. A flow chart for the PHYSICAL SECTION IMAGES folder contents is stored in the PHYSICAL SECTION IMAGES folder. A copy of this flow chart is shown in **Appendix A**.

4.13.1.3 Access to the PHYSICAL SECTION IMAGES FOLDER and sub folders is limited. Latent Discipline Analysts, Crime Scene Technicians, the Latent Discipline Supervisor and the Crime Scene Technician Supervisor have access to the Evidentiary Images Folder. The Latent Discipline Supervisor and Latent Discipline Analysts have access to the Work Product Images folder.

4.13.1.4 *Nothing additional*

4.13.2.1 See 4.13.2.5.1 in this manual

4.13.2.2 See 4.13.2.5.1 in this manual

4.13.2.2.1 See 4.13.2.5.1 in this manual

4.13.2.3 *Nothing additional*

4.13.2.3.1 *Nothing additional*

4.13.2.3.2 *Nothing additional*

4.13.2.4 See 4.13.2.5.1 in this manual

4.13.2.5 *Nothing additional*

4.13.2.5.1 (Technical records in the Latent Print Discipline will meet the criteria as described in Appendix C Latent Print Examination Records) of ASCLD/LAB-*International* Supplement Standards.)

Start Dates – End Dates – Casework Activities

The start date for casework is listed at the top of the first page of the case notes.
The end date for casework is the date listed under "Conclusions" in the case notes. Dates for each process are noted next to the process. Processes occurring on the same date are noted in sequence from top to bottom or from left to right in an analyst's notes.

Controls

Any Positive or Negative control results for ninhydrin, DFO, IND, Cyanolacrylate or dyestain are documented next to the process in the analyst's notes.

Analysis, Comparison, Evaluation, Verification

The following methodology is a structured and systematic guide for comparing friction ridge detail. There are four parts to friction ridge identification methodology that includes: Analysis, Comparison, Evaluation, and Verification. This process, which is referred to as ACE-V, is repeated for each latent print developed.
The primary purpose of these procedures is to establish unifying documentation for the methodology used in the comparison of friction ridge detail in the Latent Print Discipline.

The procedures presented are intended to assist the examiner in the comparison of friction ridge detail. They are to be used in conjunction with all applicable laboratory policies and proper scientific methodology.

For the following ACE-V procedure, a latent print is defined as friction ridge detail from an unidentified individual and a known exemplar is defined as friction ridge detail taken in a controlled manner from a known source, i.e. a "known" individual.

Analysis

The suitability of latent prints is determined by analyzing three levels of friction ridge detail. This analysis considers the quality and quantity of the three levels of friction ridge detail.

Level 1 Detail (ridge flow) is not sufficient for individualization or exclusion. This level may include: general ridge flow, pattern configuration, core and delta location, distinction of finger versus palm, and other information enabling orientation.

Level 2 Detail (individual ridge path) enables individualization. This level may include ridge endings, bifurcations, dots, or combinations thereof.

Level 3 Detail (ridge shape) may enable individualization. This level may include: ridge width and shape, pores, edge contour, incipient ridges, breaks, creases, scars, etc.

If friction ridge characteristics are insufficient, the latent print is not suitable for identification purposes. Analysis is complete for that latent print.

If there are sufficient friction ridge characteristics, the latent print is determined to be suitable for identification purposes. The Analyst moves on to Comparison.

Comparison

The first step in the comparison process is to ascertain if the appropriate known prints are available for comparison. If, for example, a print is obviously a palm because of its size and/or anatomical features, and an individual has fingerprints on file but no palm impressions on file, no comparison is necessary. The analyst will request appropriate known prints from the submitting agency for the individual. This is also the case if the only known prints on file for an individual are of very low quality. No comparison is necessary, and the analyst will request better quality known prints for the individual.

If appropriate known prints are available, the analyst will conduct a comparison of the latent print to a known exemplar to determine if the ridge formations are in agreement. (Note: Comparisons can also be made between two latent prints or two known exemplars to determine if the prints came from the same source, i.e. individual. In these cases, one of the known exemplars or latent prints is chosen for the initial analysis and the process is identical to a latent print to known exemplar comparison).

If the friction ridge characteristics are not in agreement, the exemplar print is excluded as a source of the latent print, and the comparison process proceeds to other known exemplars for the case.

Evaluation

One of the following conclusions will be reported for a latent comparison.

1. Match or Identification – The latent print is identified as matching the known prints of an individual. If the prints have been determined to be in agreement and identified, the identification is documented on a composite of the latent print and the known exemplar. The friction ridge detail observed in agreement that support identification is marked on this composite. This composite is stored online in the Work Product Folder. An unmarked composite for verification is also stored in the Work Product Folder. At this point a "Latent Verification" request is created in JTRAX and assigned to another analyst.

2. No Match – No Match is the decision by an analyst that there are sufficient features in disagreement to conclude that two areas of friction ridge impressions did not originate from the same source. Source refers to the area of friction skin. A No Match decision refers only to exclusion to the source.

3. Inconclusive – No conclusion could be reached regarding the latent print and the available known prints because portions of the known prints are of low quality or not completely recorded. The analyst will request appropriate known prints for the individual from the submitting agency to complete the comparison and evaluation of the latent print.

4. Exclusion – Exclusion, like No Match, is the decision by an analyst that there are sufficient features in disagreement to conclude that two areas of friction ridge impressions did not originate from the same source. Source refers to the area of friction skin. However, an Exclusion decision refers to an exclusion of an individual/subject and has two additional requirements.

   Two things are needed to exclude an individual/subject.

   1. An "anchor point" must be present which allows the analyst to exactly determine the anatomical location of the latent print. An anchor point may include the following:

      - Delta
      - Core
      - Anatomical aspect allowing exact determination of origin location (i.e. outline of hand or finger, characteristic ridge flow or pattern)
      - Large field of ridge detail which may not have the above (i.e. hypothenar area of palm)

   2. Clear known exemplar(s) from an individual that record ALL ridge detail that includes the "anchor point" present in the latent print. Exclusion of an individual can only be reached if all relevant comparable anatomical areas are represented and legible in the known print records.

   All exclusions of individuals must be verified by a second analyst. All exemplars for an exclusion of an individual must be included in the Work Product folder with the latent print(s) excluded to an individual. A verification request is created for the exclusion of an individual.

Verification

For identified latent prints, the assigned verifying analyst performs Analysis, Comparison, and Evaluation using the unmarked composite previously saved in the Work Product folder. The verifying analyst marks the friction ridge detail observed in agreement that support identification. This marked verification composite is stored online in the Work Product Folder.

For exclusions of individuals, the verifying analyst reviews the exemplars used by the original analyst to exclude the individual and performs Analysis, Comparison, and Evaluation to determine if they agree with the exclusion of the individual.

If the verifying analyst does not agree with an identification or exclusion of an individual, then the Latent Print Supervisor is notified for resolution. The Latent Print Supervisor may designate another analyst to review the latent in question.

Additional reviews are performed until such a time as the identification or exclusion is confirmed or refuted.

If identification is refuted, appropriate corrective actions are initiated by the Latent Discipline Supervisor.

Image Security

Access to the PHYSICAL SECTION IMAGES FOLDERS is limited as noted previously in this manual under 4.13.1.3

4.13.2.5.2 There are no instrumental analyses in the Latent Print Discipline.

4.13.2.6 *Nothing additional*

4.13.2.7 Typical casework reporting should follow the recommended reporting statements as appropriate. Not every situation can be represented by the listed report examples, so report statements may include but are not limited to the examples given.

Latent Processing Report Guidelines

1. List description of all items on which processing was performed.
2. Latent Discipline Laboratory Technicians indicate if areas of ridge detail were developed and documented.
3. Latent Discipline Analysts indicate if latent prints were developed and suitable for identification purposes.
4. Indicate disposition of retained items, submitted exemplars, and any preserved latent prints (e.g. digital images, lifts, etc.).
5.

General wording

The above digital images were analyzed for latent print evidence of value for comparisons and possible identification purposes.

The digital images associated with areas XX through XX were analyzed for latent print evidence of value for comparisons and possible identification purposes.

Item 1 was examined and processed for latent prints. Areas of potential value were observed, developed, and labeled as 1.1 through 1.5.

The digital images associated with areas 1.1 through 1.5 were analyzed for latent print evidence of value for comparisons and possible identification purposes.

The areas of potential value were analyzed for latent print evidence of value for comparisons and possible identification purposes.

Latent prints 1.1, 1.2, 1.3 were determined to be of value and were compared to known fingerprint records for **[subject name]**.

Latent Print Comparison (Identification/Exclusion/Inconclusive) Report Guidelines

Match/ID: Latent print ZZ was identified as matching the right index of **[subject name]**.

No Match: Latent print ZZ did not match the fingerprint records of **[subject name]**.

Inconclusive: No conclusion could be made regarding latent print ZZ and the fingerprint records of **[subject name]**. Portions of **[subject name]**'s fingerprint record were insufficient for identification purposes. For complete comparison results, a set of fully rolled and clear fingerprints from **[subject name]** will need to be submitted to the laboratory.

Exclusion (anatomical anchor): Latent print ZZ is a (delta area, hypothenar, palm, finger joint, etc.) impression. **[subject name]** has been excluded as the source for Latent print ZZ.

AFIS Database Searches Report Guidelines

Examples of AFIS Statements:

"An AFIS search on the remaining unidentified latent prints has been performed with negative results. The latent prints have been registered in the WIN/AAFIS database. In the event that a hit is generated at a later date, an additional report will follow."

"The suitable latent prints that (were not suitable for entry into AFIS/did not meet the criteria for an AFIS search) were not identified to known exemplars bearing the name of **[subject name]**."

4.13.2.8 *Nothing additional*
4.13.2.9 *Nothing additional*
4.13.2.10 *Nothing additional*
4.13.2.11 *Nothing additional*

4.13.2.12 All identifications and exclusions must be verified.

4.13.2.13 Latent Print Discipline abbreviations are listed in the Abbreviations Section of this manual.

4.14 Internal Audits

Nothing additional

4.15 Management Reviews

Nothing additional

5 Technical requirements

5.1 General

5.1.1 Laboratory Technicians assigned work at the laboratory in the Latent Discipline and new Analysts are competent to process latent print evidence after successfully completing Section 1 of the Latent Print Training Manual. New Analysts are competent to process latent print evidence and compare latent prints after successfully completing Section 1 and Section 2 of the Latent Print Training Manual.

5.1.2 There are no measurements of uncertainty in the Latent Print Discipline

5.1.3 Controls (positive/negative) are utilized to test the efficacy of latent print development chemicals.

In general, a latent print development chemical is applied to established (literature, et al.) reactionary substance(s) with an expected result. The reactionary substance may not necessarily be fingerprint residue (ex: blood, albumin, various fluids of similar constituents as latent print residue, etc.).

An analyst performing a control test should limit chemically misleading variables (ex: lack of humidity, insufficient latent print residue, etc.). Fluorescent reactions should be run under appropriate excitation (ALS/Laser wavelength) conditions (utilization of filters, goggles, etc.).In the case of a negative result, a second controls test should be run under similar conditions with the same lot. If a second negative result occurs, a new lot of the chemical should be prepared, logged, and control tested accordingly.

The Cyanolacrylate/Dyestain process is control tested each time it is used. A fingerprint is placed on a clear piece of glass or plastic and processed with evidence items.

Ninhydrin, DFO and 1,2 IND processes are control tested each time they are used. A fingerprint is place on a clean, white sheet of paper and processed with evidence items. Any Positive or Negative control results for casework are recorded in the Analyst's case notes.

Specific information for controls such as reactionary substance or expected results are found in the PROCESSING WORK INSTRUCTIONS appendix in this manual.

A control sample "Color change" listed in the PROCESSING WORK INSTRUCTIONS appendix is a transformation from the initial substrate hue. Example – from white paper (initial) to purple color for ninhydrin (positive result).

5.1.3.1 Initial control testing of Rhodamine, Ninhydrin and other chemicals mixed at the laboratory is noted in the CHEM INV Excel Spreadsheet for each batch.

5.2 Personnel

5.2.1 All training documented in the Latent Print Training Manual is supervised by competent, experienced Forensic Scientist III or Forensic Scientist IV analysts

5.2.1.1 All training documented in the Latent Print Training Manual is signed off by competent, experienced Forensic Scientist III or Forensic Scientist IV analysts

5.2.1.2 The Latent Print Training Manual includes a section on court testimony. A moot court is required before an analyst is released for independent casework.

5.2.1.2 The Latent Print Training Manual includes sections on other forensic disciplines, court procedures and ethics.

5.2.2 *Nothing additional*

5.2.3 *Nothing additional*

5.2.4 *Nothing additional*

5.2.5 *Nothing additional*

5.2.6 *Nothing additional*

5.2.7 *Nothing additional*

5.3 Accommodation and environmental conditions

Nothing additional

5.4 Test and calibration methods and method validation

5.4.1 The accepted processing methods used in the Latent Discipline are:

Amido Black

Cyanoacrylate

DFO

IND

Ninhydrin

Physical Developer

Powders - Plain (All colors and fluorescent powders from approved providers)

Powders - Magnetic (All colors)

Rhodamine

Wetwop (white and black)

Mixing instructions for reagents made at the laboratory are in the CHEM INV Excel Spreadsheet.

Purchased reagents such as Cyanoacrylate, Physical Developer, Powders, Wetwop, are purchased from an approved vendor.

5.4.2 Processing used for a case evidence is left to analyst discretion. Processing guidelines are listed in **Appendix B** of this manual.

5.4.3 *Nothing Additional*

5.4.4 *Nothing Additional*

5.4.5 Validation of Methods

5.4.5.1 *Nothing Additional*

5.4.5.2 *Validation records are stored in the Validations folder in the Latents Share folder.*

5.4.5.3 *Nothing Additional*

5.4.5.4 Performance Check records are stored in the Performance Checks folder in the Latents Share folder.

5.4.6 Estimation of uncertainty of measurement

5.4.6.1 *Nothing Additional*

5.4.6.2 Measurement of uncertainty does not apply to the Latent Print Discipline.

5.4.6.3 *Nothing Additional*

5.4.7 Control of data

5.4.7.1 *Nothing Additional*

5.4.7.2 *Nothing Additional*

5.4.7.2.1 Access to the PHYSICAL SECTION IMAGES FOLDER and sub folders is limited. Latent Discipline Analysts, Crime Scene Technicians, the Latent Discipline Supervisor and the Crime Scene Technician Supervisor have access to the Evidentiary Images Folder. The Latent Discipline Supervisor and Latent Discipline Analysts have access to the Work Product Images folder.

5.5 Equipment

5.5.1 Equipment used in the Latent Discipline consists of:

Ninhydrin Humidity Chamber

Cyanoacrylate Chamber

DFO Oven

532 nm Light Source

Digital Cameras

Balance

5.5.2 The Ninhydrin Humidity Chamber, Cyanoacrylate Chamber, 532 nm Light Source and DFO oven are control tested when evidence items are processed to ensure proper function.

5.5.3 Equipment manuals are stored in the Latents Share folder.

5.5.4 *Nothing Additional*

5.5.5 Spread sheets with equipment records are stored in the Latents Share folder.

5.5.6 Balances used for chemical preparation in the Latent Print Discipline are checked/calibrated yearly by an approved outside vendor. Normal maintenance includes keeping the balance clean and leveled.

5.5.7 *Nothing Additional*

5.5.8 The vendor that checks the chemical preparation balance attaches a sticker verifying the balance was checked.

5.5.9 *Nothing Additional*

5.5.10 *Nothing Additional*

5.5.11 *Nothing Additional*

5.5.12 *Nothing Additional*

5.6 Measurement traceability

5.6.1 General

5.6.1.1 *Nothing Additional*

5.6.2 *Nothing Additional*

5.6.3 Reference Standards and Reference Materials

5.6.3.1 *Nothing Additional*

5.6.3.2 *Nothing Additional*

5.6.3.2.1 The laboratory has a known palm reference collection. It consists of palm cards submitted for casework. Palm cards are identified by laboratory case number and name and filed alphabetically by last name. The palm collection is stored in the archived latent case file room which can only be accessed by Latent Discipline personnel. The key for the key for the latent case archive room is kept in a locked key box in the section.

5.6.3.3 *Nothing Additional*

5.6.3.4 *Nothing Additional*

5.7 Sampling

5.7.1 The question being asked in the Latent Print Discipline is “Did an individual leave a latent print on an item of evidence?” An analyst can select samples by quality and/or quantity. An analyst can select the evidence that has the best chance of retaining latent prints or an analyst can select and process a portion of the evidence until the individuals of interest are identified. A technician can employ sample selection if they consult with an analyst. Once an analyst identifies the individual(s) of interest on an item, processing and comparison can cease.

5.7.2 Unusual sample selection situations must be approved by the latent discipline supervisor.

5.7.3 An analyst or laboratory technician must document sampled selection in their notes. When sample selection is employed, the selected items must be identifiable at a later date. An analyst or laboratory technician must initial the sample selection items in a case at a minimum. If this is not possible, the sampled selection items may be repackaged and the analyst or technician must, at a minimum, initial the packaging.

5.8 Handling of test and calibration items

5.8.1 *Nothing Additional*

5.8.1.1 *Nothing Additional*

5.8.1.1.1 *Nothing Additional*

5.8.1.1.2 *Nothing Additional*

5.8.2 *Nothing Additional*

5.8.3 *Nothing Additional*

5.8.4 *Nothing Additional*

5.8.4.1 *Nothing Additional*

5.8.4.2 Evidence not in the process of examination is stored in a locked tote or evidence cabinet. Larger evidence may be stored in the latent case archive room.

5.8.4.3 *Nothing Additional*

5.8.4.4 *Nothing Additional*

5.8.4.5 *Nothing Additional*

5.8.4.6 Analysts using the WIN/AAFIS system will use AFIS Latent Fingerprint Best Practices, Western Identification Network, Inc., October 2008 as a reference. A copy of this guide is located in the WIN-AAFIS Folder in the Latent_Share Folder.

5.8.4.6.1 Palm files are treated as Reference Material

5.8.4.6.1.a *Nothing Additional*

5.8.4.6.1.b *Nothing Additional*

5.8.4.6.2 Palm cards are identified by laboratory case number and name

5.8.4.6.3 The palm collection is stored in the locked archived latent case file room. The key for the latent case archive room is kept in a locked key box in the section

5.8.4.6.3 The locked key box can only be accessed by Latent Discipline personnel.

5.9 Assuring the quality of test and calibration results

5.9.1 *Nothing Additional*

5.9.1.1 Control testing is covered under criteria point 5.1.3 in this manual.

5.9.2 If a control test is negative, the Latent Discipline supervisor will be notified. The Latent Discipline supervisor or a designee will take any necessary corrective action.

5.9.3 Each Latent Print analyst will take the CTS proficiency test yearly.

5.9.3.1 *Nothing Additional*

5.9.3.2 *Nothing Additional*

5.9.3.3 Each Latent Print analyst will take the CTS proficiency test yearly.

5.9.3.3.1 *Nothing Additional*

5.9.3.3.2 There is no external latent print processing proficiency test. Each Laboratory Technician processing evidence items and issuing reports will take an internal, latent print processing proficiency test approved and/or prepared by the Latent Discipline Supervisor.

5.9.3.4 Each Latent Print analyst will take the CTS proficiency test yearly.

5.9.3.5 *Nothing Additional*

5.9.3.6 *Nothing Additional*

5.9.4 *Nothing Additional*

5.9.4.1 In addition to the guidelines listed in the Laboratory Quality Assurance Manual, a Latent Print Discipline technical review will include:

Appropriateness of processes used based on substrate and possible composition of latents (e.g. bloody impressions visible indicating a blood reagent as a processing choice).

Proper process sequence

5.9.4.2 *Nothing Additional*

5.9.4.3 *Nothing Additional*

5.9.5 *Nothing Additional*

5.9.5.1 In addition to the guidelines listed in the Laboratory Quality Assurance Manual, a Latent Print Discipline administrative review will include:

Check that the photos listed in the case notes match the photos stored in the PHYSICAL SECTION IMAGES folder for the case.

5.9.6 *Nothing Additional*

5.9.7 *Nothing Additional*

5.10 Reporting the results

5.10.1 *Nothing Additional*

5.10.2 *Nothing Additional*

5.10.3 Test Results

5.10.3.1 *Nothing Additional*

5.10.3.2 *Nothing Additional*

5.10.3.3 *Nothing Additional*

5.10.3.4 *Nothing Additional*

5.10.3.5 Results and report wordings are covered under criteria point 4.13.2.7 in this manual.

5.10.3.6 Exclusions and report wordings are covered under criteria point 4.13.2.7 in this manual.

5.10.3.7 Inconclusive results and report wordings are covered under criteria point 4.13.2.7 in this manual.

5.10.4 *Nothing Additional*

5.10.5 The basis upon which opinions and interpretations are made is documented in the Identification and Verification composites stored in the Work Product folder in the PHYSICAL SECTION IMAGES folder and in the Latent Discipline analyst's notes for the case.

5.10.6 *Nothing Additional*

5.10.7 *Nothing Additional*

5.10.8 *Nothing Additional*

5.10.9 *Nothing Additional*

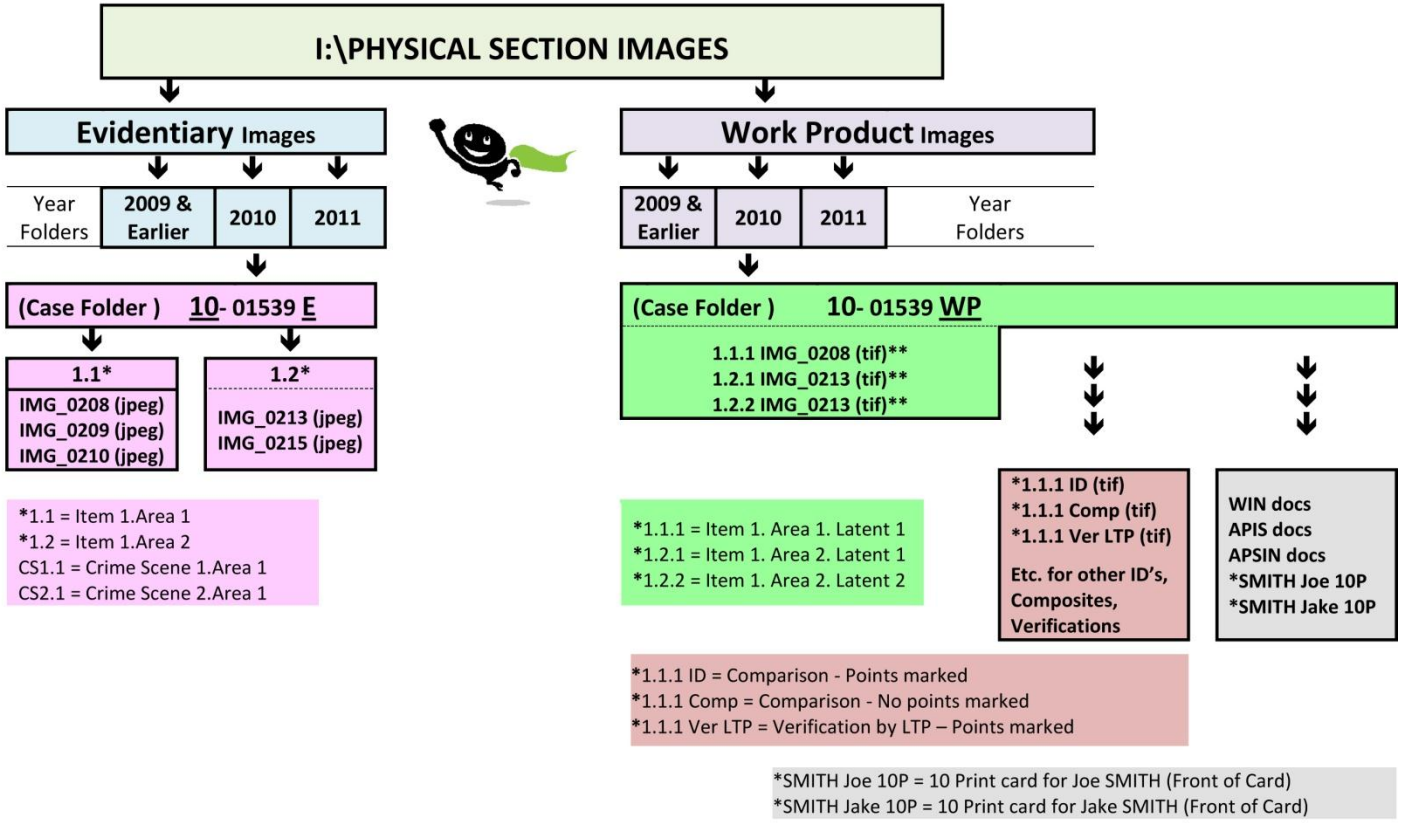
APPENDIX A - - PHYSICAL SECTION IMAGES FOLDER FLOW CHART

PHYSICAL SECTION IMAGE FOLDER OUTLINE

Evidentiary "tree" access
Latent Discipline Analysts
Crime Scene Technicians
Latent Discipline Supervisor
Crime Scene Technician Supervisor

Work Product "tree" access
Latent Discipline Analysts
Latent Discipline Supervisor

Two people, the Latent Discipline Supervisor and one designee, have permission to Delete, Export, Move files on the Evidentiary "tree".



APPENDIX B - - PROCESSING WORK INSTRUCTIONS

This appendix describes the use and safety for the different processing techniques used in the Latent Print Discipline.

Instructions for preparing chemicals made at the laboratory are found in the JTRAX Chemical Inventory. Exact measurements and proportions when preparing chemical solutions are desirable for consistent quality, but successful results in developing latent fingerprints are not dependent upon unequivocal accuracy. There is considerable latitude in preparing chemical solutions for latent fingerprint techniques without adversely affecting the successful development of latent prints.

AMIDO BLACK

Description of Process

Amido Black, also known as napthol blue-black, is used to develop or enhance latent prints that have been left in blood. Amido Black stains the proteins in the blood turning the print a dark blue or black color. This is not the only blood print development technique available.

Amido Black may destroy blood for serology/DNA testing. Have evidentiary blood samples chemically tested and preserved by appropriate personnel prior to processing. It will not develop prints in perspiration, fats and oils, or salts. The background of a porous item may also stain, causing weak bloody prints to not be detected.

Cyanoacrylate ester fuming may be detrimental to this process.

Sequence

Amido Black is typically utilized instead of other processes (cyanoacrylate ester fuming, powders, etc.). Although a light application of cyanoacrylate ester fuming may be applied previous to Amido Black application to preserve latent prints not in apparent blood.

Process for Use

Amido Black is typically prepared in the laboratory and not purchased as a working solution. Shelf life is indefinite for Amido Black and Rinse Solution.

1. Preserve any suitable visible prints present on evidence prior to applying Amido Black solutions.

2. Apply the Amido Black base solution by dipping, spraying, or using a squirt bottle to dried prints in apparent blood. Apply until the entire print has turned from a reddish-brown color to a blue-black color. Background staining may occur.

3. If necessary, the base solution can be re-applied before the final rinse to achieve sufficient clarity.

4. Rinse off excess base solution with the rinse solution (use additional rinses as necessary to achieve sufficient clarity).

5. Let dry.

6. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by digital imaging/photography.

Note: Developed latent prints on some dark-colored surfaces may be viewed with a light source for increased contrast.

AMIDO BLACK

ControlTesting

Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on glass slide

Positive results – purple, blue, black color change

Negative results – no color change

Safety

Mix only in a vent hood.

When mixing or using, must wear gloves and eye protection.

Chemicals are flammable and skin irritant.

Caution should always be exercised around a bloody crime scene or handling items which contain blood.

Excess is disposed of as any flammable liquid.

Protective lab coats, footwear, eyewear, and latex gloves should be worn.

Since Amido Black is mixed with methanol, which is highly flammable, extreme caution should be taken when at a crime scene as to make sure.

CYANOACRYLATE

Description of Process

The super glue process was first used for latent print development by the Japanese police in the late 1970s. A glue containing cyanoacrylate is placed in an airtight chamber with the evidence. As the glue dries, the fumes from the drying glue circulate throughout the chamber adhering to the latent print residue left on the evidence. The prints may then be dusted and lifted or preserved through photography and/or digital imaging. The process will develop fresh as well as old prints.

Sequence

Cyanoacrylate Ester Fuming is typically utilized after a visual examination and before the utilization and application of other processes (ex: Powder Processing and/or Fluorescent Dye Staining). Cyanoacrylate Ester Fuming may interfere with DNA analysis and latent print blood enhancement techniques (such as Amido Black processing).

Process for Use

Cyanoacrylate is purchased as a working solution. Shelf life is indefinite for this purchased product.

1. Place aluminum dish on a heating device and pour approximately one (1) teaspoon of glue in the dish. May use more or less glue depending on evidence being processed.
2. May add accelerator (ex: water), if required. Manufacturer recommends optimum humidity of 30-60%.
3. Place evidence into fuming chamber either by suspending or standing so all areas are exposed.
4. Seal fuming chamber.
5. Turn on heating device. Manufacturer recommends operation at 60º-85º F (16º-29º C) and not to heat above 250º F (120º C).
6. After latent print(s) are developed (usually 8 to 30 minutes), turn the heater off and exhaust the fumes from chamber before opening. May process item longer with superglue, as needed, for adequate clarity of results.
7. Vent chamber (usually 10 or more minutes).
8. Remove evidence and view for developed latent prints. Oblique and/or intense light may be utilized to better visualize developed latent prints.
9. If suitable latent prints are developed, the examiner may indicate the latent print with suitable markings as appropriate to be preserved by digital imaging/photography.
10. Depending on type of evidence, additional processing techniques for development of latent prints may be used (ex: Powder Processing and/or Fluorescent Dye Staining).

CYANOACRYLATE

ControlTesting

Reactionary substance: latent print on glass slide or clear plastic

Positive results – white/off-white film

Negative results – lack white/off-white film

Safety

Precautions should be taken as to not get the glue on your skin. Wear eye protection and latex gloves. If you do get glue on your skin and get attached to something, do not try to pull apart. Use water or acetone and then rub apart to release. Use in a vent hood or use an exhaust system to remove fumes from the chamber prior to opening the fuming chamber and removing the evidence. Cyanoacrylate ester fuming may be a respiratory and eye irritant.

DFO (1, 8 – DIAZAFLUOREN – 9 – ONE)

Description of Process

DFO is used to develop latent prints on porous surfaces. DFO is a Ninhydrin analogue and reacts to the amino acids present in perspiration. The prints will appear a pinkish-orange color; however, when viewed under various lasers and alternate light sources the prints will fluoresce brightly and are much more visible, especially on a dark colored surface that might hide prints that have been developed with Ninhydrin alone.

Sequence

If other processes are to be used on the same piece of evidence, DFO should be used after IND and before Ninhydrin or Physical Developer.

Process for Use

DFO crystals are purchased and the DFO Stock solution and DFO Working Solution are prepared in the laboratory.

1. Apply or dip the item in the DFO working solution for approximately ten (10) seconds, allow drying for approximately three (3) minutes.

2. Repeat the process.

3. Heat is then applied to the dried specimen by placing it in an oven that contains no humidity or use an iron with no steam. Heat for ten (10) minutes at 100 C (212 F).

4. View under a laser or other alternate light source as the developed prints may be invisible to the naked eye.

5. Examine item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by digital imaging/photography.

DFO (1, 8 – DIAZAFLUOREN – 9 – ONE)

Control Testing

Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on porous white paper

Positive results – (visual; optional) pinkish-orange, pink, orange; (ALS/Lasers) fluorescence (orange, red-orange due to filters)

Negative results – (visual) no color change; (ALS/Lasers) no fluorescence

Safety

Reagent is flammable. It is a sensitizer and causes staining of the skin. Mixing must be performed in a vent hood wearing lab coat, gloves, and eye protection. DFO is mixed with carriers that are highly flammable and irritant. Wear gloves, a lab coat, safety eyewear and use in a lab fume hood.
Must be disposed of like any other flammable chemical.

IND (1,2-INDANEDIONE)

Description of Process

1,2-Indanedione is a fluorescent amino acid reagent applied for developing latent prints on porous surfaces such as paper and cardboard. There is no discoloration or background staining evident on the 1,2-Indanedione processed samples that consistently appears when processing with DFO. 1,2-Indanedione may be used in place of DFO.

Sequence

If other processes are to be used on the same piece of evidence, IND should be used prior to DFO, Ninhydrin and Physical Developer.

Process for Use

IND crystals are crystals are purchased and a working solution is prepared in the laboratory.

1. Apply the IND solution to an item by spraying, dipping or brushing.

2. Allow to dry for approximately three minutes.

3. After the IND has dried, place the processed item in a humidity chamber to accelerate the development process.

4. 10 minutes at 100 C and 60% relative humidity.

5. The best results obtained for the thermal paper samples were achieved by not accelerating the development and allowing them to develop naturally in the laboratory environment from 4 to 12 hours.

6. Developed prints are observed through an orange/amber viewing filter using a light source.

7. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by photography.

8. The results can also be seen on some samples with white light and develop as a light pale pink color.

IND (1,2-INDANEDIONE)

Control Testing

Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on porous white paper

Positive results – (visual; optional) light/pale pink color; (ALS/lasers) fluorescence (orange due to filters)

Negative results – (visual) no color change; (ALS/Lasers) no fluorescence

Safety

Chemicals used in preparation and process are flammable and irritant. Avoid contact with skin and eyes. Wear proper protective equipment when preparing and processing items: lab coat, gloves, and safety glasses (goggles). Wear amber protective eye wear when viewing results under laser light.

NINHYDRIN

Description of Process

Ninhydrin is a chemical method for developing latent prints on porous surfaces and absorbent materials such as paper, cardboard, and smooth raw wood. This method is based on the reaction of Ninhydrin and amino acids that are present in latent print residue. The first known use of Ninhydrin for latent print processing was in the early1950s. It is sensitive to old prints as well as fresh prints.

Ninhydrin can be mixed using two carriers: acetone or petroleum ether.

Sequence

Evidence that may have potential DNA evidentiary value may be processed for latent prints with Ninhydrin previous to DNA sample collection.

Ninhydrin can be utilized by itself or in conjunction with other processes if used in the following order:
1. IND; 2. DFO; 3. Ninhydrin; 4. Physical Developer

Process for Use

Ninhydrin crystals are purchased, but a working solution is typically prepared in the laboratory. Shelf life is approximately six months for a working solution.

1. Select the appropriate Ninhydrin base solution dependent upon the other substances on the surface. Acetone will cause certain inks to dissolve. Therefore, handwriting analysis should be performed before processing for latent prints begins.

2. Apply Ninhydrin solution to an item by spraying, dipping, or brushing.

3. After the Ninhydrin has dried, place the processed item in humidity chamber or steam the item with an iron to accelerate the development process.

4. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by digital imaging/photography or scanning.

Note: Developed latents on some dark-colored surfaces may be viewed with a light source for increased contrast. Development of latent prints may vary with exposure time to Ninhydrin.

NINHYDRIN

ControlTesting

Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on porous white paper

Positive results – purple, pink, black color change

Negative results – no color change

Safety

Ninhydrin should be used in a laboratory fume hood, a well-ventilated area, or outside.

Gloves, lab coat, and safety eyewear must be worn when using.

Ninhydrin is mixed with a carrier such as methanol, acetone, or petroleum ether (which is highly flammable).

Excess is disposed of as any flammable liquid.

POWDERS - PLAIN

Description of Process

Black powder is one of the oldest and most basic methods of developing latent prints on non-porous surfaces. Powder is applied to a surface by lightly dusting over the surface with a soft bristle type brush or duster. Once prints are developed they should be preserved for later comparison by either photography and/or lifted with lifting tape and placed on a lift card. Black powder is not the only color available; however, it is the most commonly used type of powder (even on dark colored surfaces). In addition, there are fluorescent powders that may be used, which require the use of an alternate light source and appropriate filters.

Sequence

Powder Processing can be used at the Forensic Scientist or Technician's discretion. It should not be used on porous items such as checks, cardboard, paper sacks, etc. A chemical process would be best suited for these types of evidence; however, if the paper or cardboard has a shiny or slick surface (such as magazine covers or matchbook covers) it could be used.

Safety

Powder can easily be inhaled. Wear a facemask to filter out loose powder in the air or dust in a fume hood. Wearing gloves will prevent you from getting your hands dirty; however once lifting tape is placed over the developed latent; gloves make it difficult to rub out air bubbles.

POWDERS – PLAIN Process for Use

All powder is purchased and not prepared in the laboratory.

1. Prior to applying the powder to the surface that is to be processed, view the item for prints that are visible to the eye; such as prints in blood, grease, or any foreign residue. If there are visible latent, patent, or plastic prints:

    a) Do not handle the evidence excessively since the item has not yet been processed.

    b) Consider alternative processing techniques for prints in blood, grease, or any foreign residue.

2. Take the jar of powder and tap the jar into the palm of the hand several times to break up clogs of powder and loosen the powder that has settled.

3. Pour a small amount of powder (two to three tablespoons) into a container.

4. Choose a type of brush to apply powder.

    a) Fiberglass or nylon – to be used on small or large objects.

    b) Feather duster – for larger objects.

    c) Short bristle brush – for small objects and also used for cleaning up latents by lightly brushing in the direction of ridge flow.

5. Hold fiberglass brush, nylon brush, or feather duster between palms of your hands, rub hands back and forth several times to loosen and fluff out bristles or feathers.

    a) Dip the brush into the container of powder lightly to pick the powder up.

    b) Tap the brush several times with your index finger over container to release excess powder.

6. Apply the powder to the surface by lightly dusting over the surface (only the tips of bristles or feathers should touch the surface).

    a) Twirling motion – fiberglass brush

    b) Back and forth motion – fiberglass, feather duster, or short bristle brush

    c) Figure eight type motion – feather duster

    d) Once a latent is visible, view the latent and then apply a few more strokes of powder. If the latent starts to lighten up or starts looking spotty – stop processing. The latent is at its maximum contrast. Additional processing will destroy or deteriorate the latent.

7. Remove the excess powder from the processed item.

    a) Tap item lightly on counter.

    b) Use short bristle brush (brushing with the flow of ridges).

    c) Make multiple lifts of the same print.

8. Preserve the latent print for later comparison by either digital imaging/photography or a lifting technique appropriate to the evidence.

POWDERS – MAGNETIC

Description of Process

With magnetic powder, there is no brush with fibers or bristles to hold the powder. The powder is actually made up of finely ground metal shavings with colored powder. The powder is applied with a metal rod or wand that has a magnet inside that attracts the powder-like whiskers. This method was developed in the early 1960's. It is not used for every piece of evidence; it is just another tool available in the latent processing field.

Sequence

Magnetic Powder can be used at the Forensic Scientist or Technician's discretion, usually after cyanoacrylate fuming. Magnetic Powder Processing is not suited for processing metal objects or porous items such as checks, raw cardboard, or paper sacks; however, it can be used on shiny slick surfaces such as magazine covers, match book covers, etc.

PROCESS FOR USE

All powder is purchased and not prepared in the laboratory.

1. Prior to applying the powder to the surface that is to be processed, view the item for prints that are visible to the eye; such as prints in blood, grease, or any foreign residue. If there are visible latent, patent, or plastic prints:

    a) Do not handle the evidence excessively since the item has not yet been processed.

    b) Consider alternative processing techniques for prints in blood, grease, or any foreign residue.

2. Take the jar of powder and tap the jar into the palm of the hand several times to break up clogs of powder and loosen powder that has settled.

3. Stick large bulb end of wand into the jar to pick up metal shavings. Pull the rod out of the wand to release metal shavings.

4. Go over the surface using a back and forth motion with only the metal shavings coming in to contact with the surface. CAUTION: If the metal bulb end comes in to contact with the surface, it could scratch or destroy a latent print.

5. Remove excess powder from the item processed.

    a) Tap the item lightly on the counter.

    b) Use a short bristle brush (brushing with the flow of ridges).

    c) Make multiple lifts of the same print as necessary.

6. Preserve the latent print for later comparison by either photography or a lifting technique appropriate to the evidence.

Safety

There are no known safety hazards. Magnetic Powder Processing is not as messy as Powder Processing. Any overspill can be picked up with the wand and released back into the container.

PHYSICAL DEVELOPER

Description of Process

The Physical Developer process is used for processing porous surfaces, especially on porous surfaces that have been wet, and on U.S. currency. It reacts with the fats, oils, and waxes present in the fingerprint residue. Until the introduction of a two-solution pre-mixed kit, Physical Developer had to be mixed from seven different chemicals following a complicated mixing routine.

Sequence

Physical Developer can be used in conjunction with other processes but normally after IND, DFO, and Ninhydrin.

Process for Use

Physical Developer is typically purchased as a working solution and not prepared in the laboratory.

1. Lay out three (3) glass trays

    a) Maleic acid prewash If not used the Physical Developer will cause the paper to turn dark and obliterate any latent prints.

    b) Physical Developer working solution

    c) Water rinse

2. Immerse the item(s) in the prewash until the bubbles stop (do NOT use metal tongs).

3. Transfer the item(s) to the working solution. The tray with the working solution should be placed on an orbital shaker or manually rocked back and forth by hand. Leave the item(s) in the working solution for 5 to 15 minutes or until latents are developed.

4. Remove the item(s) and place them in a water rinse to remove excess solution.

5. Remove the item(s) from the water rinse and let dry.

6. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by photography.

7. If latents are hidden by a dark background color the background can be lightened up by placing the item(s) in a 50% household bleach – 50% tap water solution.

8. The prints will appear grayish-brown in color.

PHYSICAL DEVELOPER

ControlTesting

Reactionary substance: latent print on porous white paper

Positive results – grey/black color change

Negative results – no color change

Safety

The Physical Developer process can be carried out with no known health hazards, provided a few precautions are carried out, such as wearing lab coats, latex gloves, and safety eyewear. The reagents in the working solutions are corrosive and toxic and will cause black staining on skin and clothing. Maleic acid is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Mix in a fume hood while wearing gloves, lab coat and eye protection.

RHODAMINE 6G FLUORESCENT DYE PROCESSING

Description of Process

Rhodamine 6G is to be used only on non-porous items and after the item has been treated with cyanoacrylate fuming. Rhodamine 6G is a fluorescent dye used to make cyanoacrylate developed latent prints more visible on various colored surfaces. Lasers or alternate light sources are used in conjunction with this process. Rhodamine 6G enhanced latent prints will have to be photographed under a light source. Different carriers for the working solution can be utilized to decrease processing times, preserve inked markings on evidence, or for use on special surfaces.

Sequence

Rhodamine 6G is to be applied only after a non-porous has been exposed to cyanoacrylate fuming. Powder application may be utilized before or after use of Rhodamine 6G.

Process for Use

Rhodamine 6G crystals or powder is purchased and working and stock solutions are prepared in the laboratory.

1. After the evidence has been processed by cyanoacrylate ester fuming, apply the appropriate Rhodamine 6G working solution by either dipping, or using a spray device or squirt bottle.

2. Place the evidence under a fume hood to dry.

3. Examine the evidence under the laser and view using an orange filter. The power setting (beam intensity) may be adjusted as needed.

4. If the dye appears to be in excess, it may be rinsed with an application of distilled water or methanol over the evidence to reduce its thickness. A second application of dye stain may be necessary after the rinse.

5. Examine the item for latent prints and indicate the latent with suitable markings as appropriate to be preserved by photography.

ControlTesting

Reactionary substance: cyanoacrylate print on glass slide or clear plastic

Positive results – fluorescence (orange due to filters)

Negative results – no fluorescence

Safety

Rhodamine 6G working solution and stock solutions are extremely flammable and caution should be used. This reagent should be mixed and applied to evidence under a fume hood so it is not inhaled. Gloves, a lab coat, and eye protection should be used.

WETWOP/WET POWDER

Description of Process

Wetwop and other sticky side powder equivalents are used to develop latent prints on the adhesive sides of tapes, decals, and other items.

Sequence

Wetwop/Wet Powder and other sticky side powder equivalents are typically used instead of other processes (cyanoacrylate ester fuming, Rhodmine 6G, etc.) on the adhesive side of items. The non-adhesive side may be processed as normal before applying Wetwop/Wet Powder and other sticky side powder equivalents. Adhesive surface processing may interfere with DNA analysis.

Process for Use

Wetwop and Wet Powder are typically purchased as a working solution. Shelf life is indefinite for purchased Wetwop and Wet Powder.

1. Shake container before use.
2. Pour small working amount of Wetwop, Wet Powder, or other sticky side powder equivalent into appropriately sized container.
3. Using latent print/fingerprint brush, apply solution onto the adhesive side of tape or other adhesive surface.
4. Leave on for 10-15 seconds.
5. Rinse off under slow running, cool water.
6. Let dry.
7. Examine the item for latent prints and indicate the latent with suitable detail as appropriate to be preserved by digital imaging/photography.

Safety

No known safety hazards. Although manufacturer caution states “Wet Powder is a highly stainable product. Use proper clothing.”

APPENDIX C - - WIN/AAFIS, IAFIS

COMPUTER DATABASES

WIN/AAFIS is the Western Identification Network/Alaska Automated Fingerprint Identification System. It is a ten print record database jointly shared by Alaska, Oregon, Idaho, Utah, Nevada, Montana, Washington, BICE (Bureau of Immigration and Customs Enforcement) and Wyoming. California and several other individual agencies are interface members of the network.

IAFIS is the Integrated Automated Fingerprint Identification System. It is the system and database maintained by the FBI.

The Latent Print Training Manual includes a section on the use of WIN. The procedures used can be found in the WIN AFIS21 Global Workstation GWS-L User Guide and Print Quest AFIS Manual.

IAFIS is not frequently utilized. Latent Examiners can be trained by a designated WIN Trainer. The procedures for IAFIS are outlined in the WIN AFIS21 Global Workstation GWS-L User Guide, Appendix B.

SEARCHING

All latent prints that are of sufficient quality and have not been identified with known finger or palm prints can be entered into WIN/AAFIS, APIS, or IAFIS if requested on the Request for Lab Services Form or if confirmed with the requesting agency/officer.

Latents are searched at the discretion of the examiner signing the report for the case.

INDIVIDUAL CHARACTERISTIC DATABASE SAMPLES

The individual characteristic database sample files for the Latent Print Discipline contain known palm, major case prints, ten print cards and sole impressions from suspect and elimination persons. These impressions are reference samples.

The reference samples are stored in a locked room. Latent Discipline employees have access to the room. The files for each individual are stored in manila envelopes and arranged alphabetically by last name. The samples are uniquely identified by name and laboratory case number.

APPENDIX D - - DNA SAMPLING

Analysts in the Latent Print Discipline may be responsible for collecting contact DNA from evidence items.

The analyst should rely on the DNA Section to determine if any of their processing substances may interfere with subsequent DNA analysis. The analyst may use their discretion to determine the order of processing, including at what stage the DNA sample is taken. This decision is based upon training and experience and is dependent upon the nature and the condition of the evidence.

Due to the possibility of DNA transfer which can occur with the re-use of fingerprint powder brushes, it is recommended that DNA be collected before the application of fingerprint powders.

Isolating DNA Samples

1. Standard casework precautions should be observed to prevent sample contamination, such as clean work table, evidence on fresh sheet of paper, new gloves, mask and new and/or cleaned sampling materials.

2. A sample may be isolated by swabbing it.

3. Let the DNA analysts know about any chemicals or processing that was performed in this section on the sample area prior to sample collection. This information may be included on the DNA Case Status Summary form, and should appear in bench notes. It may also be noted on the sample packaging.

Swabbing Method

1. Take two swabs of each sample area (eg. Mouth area of can/bottle, textured areas on firearm). The first swab applied to the stain should be wet, followed by a dry swab. These swabs should be packaged together as one sample.

2. Water used to moisten the swab should be prepared by the DNA section. Water used for swabbing should be replaced one month after being opened. The date opened is recorded on the bottle. This date and the lot number of the water should be in the analyst's case notes. The pipette system with the disposable pipette is the approved method for applying water to the swab for IN LAB swabbing.

3. If other water is used (not prepared by the DNA section), a control swab of the water should be prepared. This control swab should be packaged as a separate item.

4. Swabs should be air-dried before packaging.

Packaging DNA Samples

1. Each separate area sampled should be given a unique number. For example, if there are two separate samples from item 41, then they should be labeled as 41-1 and 41-2 using hyphens to separate the item number from the sample number.

2. Each sample should be packaged separately and labeled.

   Example for swab label:

Lab # 00-00000 **Swab 41-1 from the mouth of the bottle (Item 41)**

3. The packaged samples should then be placed in an outer envelope which is labeled with a complete description of the contents and labeled with the item number and the analysts initials (for example: as item #41LCH (LCH being the analyst's initials).

4. The created item should be added as evidence in LIMS and the DNA pending assignment in JTRAX is assigned to the DNA Discipline Supervisor to alert the DNA Discipline that contact DNA sampling has been completed.

APPENDIX E - - REFERENCES

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APPENDIX F - - REVISION HISTORY

LP2011 R0 Effective date 08/24/11 - Total rewrite of manual for ISO standards

Changes from LP2011R0 to LP2012R0			
11R0 Page	Change effective 01/24/2012	11R0 Page	Change effective 01/24/2012
1	Updated Document Structure to reflect Removal of **Appendix A** and new page numbers	4	Removed Abbreviations EN Enhanced FLP Fluorescent Powder FPC Finger Print Card GB Gun Blue EN Enhanced FLP Fluorescent Powder ID2 Identified to IO Iodine IPP Inked Palm Print LA Labeled As LC Lift Card(s) Lt Left Replaced LtI with LI Replaced LtL with LL Replaced LtM with LM Replaced LtR with LR Replaced LtT with LT Removed Abbreviations LtP Left Palm MAP Maleic Acid Prewash MCP Major Case Prints
3	Removed Abbreviations Aba Amido Black- Aqueous ABRa Amido Black Rinse- Aqueous ABm Amido Black- Methanol Carrier ABRm Amido Black Rinse- Methanol Carrier **Replaced with AB Amido Black** Removed Abbreviations AQ AFIS Quality BG Bag BiP Bichromatic Powder BiMP Bichromatic Magnetic Powder BLK Black BMP Black Magnetic Powder Brn Brown BY Basic Yellow C: Containing CHAR Characteristics CHEM Chemistry CLR Clear COMP Compared or Comparison		
5	Removed Abbreviations NINd Dry Ninhydrin Process NINh Ninhydrin HFE Carrier NINp Ninhydrin Petroleum Ether Carrier **Replaced with NIN Ninhydrin** Removed Abbreviations P Palm PG Plastic Bag PH Photographed Pi Pink POSS Possible PP Palm Print PPC Palm Print Card Rt Right Replaced RtI with RI Replaced RtL with RL Replaced RtM with RM Replaced RtR with RR Replaced RtT with RT Removed Abbreviation RtP Right Palm	6	Removed Abbreviations SPRg Small Particle Reagent – Gray SPRw Small Particle Reagent - White
		10	4.6.2 Initial control testing of . . . . chemicals mixed at the laboratory is noted in the JTRAX Chemical Inventory for each batch. Changed to 4.6.2 Initial control testing of . . . . chemicals mixed at the laboratory is noted in the CHEM INV Excel Spreadsheet for each batch. --- 4.6.4 **Appendix A** lists the Latent Discipline Approved Vendors. Changed to 4.6.4 The Latent Discipline does not have any critical consumables.
		12	4.13.1.2 Digital photos and/or scans…….flow chart is shown in **Appendix B** Changed to 4.13.1.2 Digital photos and/or scans…….flow chart is shown in **Appendix A**

Changes from LP2011R0 to LP2012R0			
11R0 Page	Change effective 01/24/2012	11R0 Page	Change effective 01/24/2012

19	4.13.2.12 All identifications must be verified Changed to 4.13.2.12 All identifications and exclusions must be verified	24	5.7.1 Usually, an analyst works all the evidence submitted for a case. However, the question being asked in the Latent Print Discipline is "Did an individual leave a latent print on an item of evidence?" An analyst can sample by quality or quantity and select the evidence that has the best chance of retaining latent prints or selecting and working a sampling of the evidence until the individuals of interest are identified. A technician, may sample evidence items if they consult with an analyst to compare the developed prints. Once an analyst identifies the individual(s) of interest on an item, processing and comparison can cease. Changed to 5.7.1 The question being asked in the Latent Print Discipline is "Did an individual leave a latent print on an item of evidence?" An analyst can select samples by quality and/or quantity. An Analyst can select the evidence that has the best chance of retaining latent prints or an analyst can select and process a portion of the evidence until the individuals of interest are identified. A technician can employ sample selection if they consult with an analyst. Once an analyst identifies the individual(s) of interest on an item, processing and comparison can cease. ---------- 5.7.2 Unusual sampling plan situations must be approved by the Latent Print Supervisor. Changed to 5.7.2 Unusual sample selection situations must be approved by the latent discipline supervisor. ---------- 5.7.3 An analyst or laboratory technician…….at a minimum. Changed to 5.7.3 An analyst or laboratory technician must document sampled selection in their notes. When sample selection is employed, the selected items must be identifiable at a later date. An analyst or laboratory technician must initial the sample selection items in a case at a minimum. If this is not possible, the sampled selection items may be repackaged and the analyst or technician must, at a minimum, initial the packaging. ---------- 5.8.4.2 Evidence not in the process of examination is stored a locked tote. Larger evidence may be stored in the latent case archive room. Changed to 5.8.4.2 Evidence not in the process of examination is stored in a locked tote or evidence cabinet. Larger evidence may be stored in the latent case archive room.
20	5.1.3.1 Initial control testing of Rhodamine . . . . chemicals mixed at the laboratory is noted in the JTRAX Chemical Inventory for each batch. Changed to 5.1.3.1 Initial control testing of Rhodamine. . . . chemicals mixed at the laboratory is noted in the CHEM INV Excel Spreadsheet for each batch.		
21	5.4.1 Mixing instructions for reagents made at the laboratory are in the JTRAX Chemical Inventory. Changed to 5.4.1 Mixing instructions for reagents made at the laboratory are in the CHEM INV Excel Spreadsheet. ---------- - 5.4.2 Processing used for a case evidence …….. are listed in **Appendix C** of this manual. Changed to 5.4.2 Processing used for a case evidence……..are listed in **Appendix B** of this manual		
22	5.5.3 Equipment manuals are stored in the Equipment folder in the Latents Share folder. Changed to 5.5.3 Equipment manuals are stored in the Latents Share folder. ---------- - 5.5.5 A spread sheet with equipment records is stored in the Equipment folder in the Latents Share folder. Changed to 5.5.5 Spread sheets with equipment records is stored in the Latents Share folder.		

Changes from LP2011R0 to LP2012R0	
11R0 Page	Change effective 01/24/2012
25	5.8.4.6.1 *Nothing Additional* Changed to 5.8.4.6.1 Palm files are treated as Reference Material
27	Removed **APPENDIX A - - APPROVED VENDORS**
28	Renamed **APPENDIX B - - PHYSICAL SECTION IMAGES FOLDER FLOW CHART** **APPENDIX A - - PHYSICAL SECTION IMAGES FOLDER FLOW CHART**
29	Renamed **APPENDIX C - - PROCESSING WORK INSTRUCTIONS** **APPENDIX B - - PROCESSING WORK INSTRUCTIONS**
43	Renamed **APPENDIX D - - WIN/AAFIS, IAFIS** **APPENDIX C - - WIN/AAFIS, IAFIS**
44	Renamed **APPENDIX E - - DNA SAMPLING** **APPENDIX D - - DNA SAMPLING**
46	Renamed **APPENDIX F - - REFERENCES** **APPENDIX E - - REFERENCES**
43	Renamed **APPENDIX D - - WIN/AAFIS, IAFIS** **APPENDIX C - - WIN/AAFIS, IAFIS**
48	Renamed **APPENDIX G - - REVISION HISTORY** **APPENDIX F - - REVISION HISTORY**

Changes from LP2012R0 to LP2012R1			
12R0 Page	Change effective 07/01/2012	12R0 Page	Change effective 07/01/2012
13	Under Comparison heading Added The first step in the comparison process is to ascertain if the appropriate known prints are available for comparison. If, for example, a print is obviously a palm because of its size and/or anatomical features, and an individual has fingerprints on file but no palm impressions on file, no comparison is necessary. The analyst will request appropriate known prints from the submitting agency for the individual. This is also the case if the only known prints on file for an individual are of very low quality. No comparison is necessary, and the analyst will request better quality known prints for the individual. If appropriate known prints are available, the analyst will…	14	Under Evaluation heading Added Inconclusive – No conclusion could be reached regarding the latent print and the available known prints because portions of the known prints are of low quality or not completely recorded. The analyst will request appropriate known prints for the individual from the submitting agency to complete the comparison and evaluation of the latent print. Changed Exclusion of an Individual – Exclusion of an individual is the result of the comparison of two friction ridge impressions containing sufficient quality (clarity) and quantity of friction ridge detail which is not in agreement. Exclusion occurs when a latent print examiner, trained to competency, determines that two friction ridge impressions originated from different sources. Two things are needed to exclude an individual. 1. An “anchor point” must be present to determine the anatomical location of the latent print for an exclusion. An anchor point may include the following: To read as Exclusion – Exclusion, like No Match, is the decision by an analyst that there are sufficient features in disagreement to conclude that two areas of friction ridge impressions did not originate from the same source. Source refers to the area of friction skin. However, an Exclusion decision refers to an exclusion of an individual/subject and has two additional requirements. Two things are needed to exclude an individual/subject. 1. An “anchor point” must be present which allows the analyst to exactly determine the anatomical location of the latent print. An anchor point may include the following:
14	Under Evaluation heading Removed If there is insufficient detail to form a conclusive identification. 1. The latent print may be compared to other prints, or 2. Determined to be inconclusive with documented justification, or 3. Determined to be not suitable for identification purposes with documented justification. In this instance analysis is discontinued. Added One of the following conclusions will be reported for a latent comparison. Match or Identification – The latent print is identified as matching the known prints of an individual No Match – No Match is the decision by an analyst that there are sufficient features in disagreement to conclude that two areas of friction ridge impressions did not originate from the same source. Source refers to the area of friction skin. A No Match decision refers only to exclusion to the source.		

Changes from LP2012R0 to LP2012R1			
12R0 Page	Change effective 07/01/2012	12R0 Page	Change effective 07/01/2012
16	Removed Examples of Latent Processing Statements include but are not limited to the following: "No latent prints were developed on **[item]**." (No ridge detail) "No suitable latent prints were developed on **[item]**." (Ridge detail present not suitable for identification) "Suitable latent prints were developed and preserved (photographed, scanned, or lifted) on **[item]**." (Ridge detail present suitable for identification) "The suitable latent print developed appears to be a palm print (or finger, tip, side, joint, palm, toe, sole, etc)." "Please submit known (fingerprints, palm prints or foot prints) of individuals associated with the case for comparisons to be made." Added General wording The above digital images were analyzed for latent print evidence of value for comparisons and possible identification purposes. The digital images associated with areas XX through XX were analyzed for latent print evidence of value for comparisons and possible identification purposes. Item 1 was examined and processed for latent prints. Areas of potential value were observed, developed, and labeled as 1.1 through 1.5. The digital images associated with areas 1.1 through 1.5 were analyzed for latent print evidence of value for comparisons and possible identification purposes. The areas of potential value were analyzed for latent print evidence of value for comparisons and possible identification purposes. Latent prints 1.1, 1.2, 1.3 were determined to be of value and were compared to known fingerprint records for **[subject name]**.	17 Thru 18	Removed Reports regarding latent print comparisons must include: 1. Item description **[item]** (include item number, item description, and latent location as necessary). 2. Finger/palm/foot identified **[print designation]**. 3. Source of Exemplar **[subject name]** (include subject name and associated APSIN ID#, DOB, or other identifier as necessary). Examples of Identification Statements include but are not limited to the following: ……. **Thru to page 18 ending with** …….. "The known prints DPS has on file or the known prints submitted are not suitable for a complete examination to be made." Added Match/ID: Latent print ZZ was identified as matching the right index of **[subject name]**. No Match: Latent print ZZ did not match the fingerprint records of **[subject name]**. Inconclusive: No conclusion could be made regarding latent print ZZ and the fingerprint records of **[subject name]**. Portions of **[subject name]**'s fingerprint record were insufficient for identification purposes. For complete comparison results, a set of fully rolled and clear fingerprints from **[subject name]** will need to be submitted to the laboratory. Exclusion (anatomical anchor): Latent print ZZ is a (delta area, hypothenar, palm, finger joint, etc.) impression. **[subject name]** has been excluded as the source for Latent print ZZ.

Changes from LP2012R0 to LP2012R1			
11R0 Page	Change effective 07/01/2012	11R0 Page	Change effective 07/01/2012
19	5.1.3 Added Controls (positive/negative) are utilized to test the efficacy of latent print development chemicals. In general, a latent print development chemical is applied to established (literature, et al.) reactionary substance(s) with an expected result. The reactionary substance may not necessarily be fingerprint residue (ex: blood, albumin, various fluids of similar constituents as latent print residue, etc.). An analyst performing a control test should limit chemically misleading variables (ex: lack of humidity, insufficient latent print residue, etc.). Fluorescent reactions should be run under appropriate excitation (ALS/Laser wavelength) conditions (utilization of filters, goggles, etc.).In the case of a negative result, a second controls test should be run under similar conditions with the same lot. If a second negative result occurs, a new lot of the chemical should be prepared, logged, and control tested accordingly. Changed Any Positive or Negative control results are recorded in the Analyst's case notes. To read as Any Positive or Negative control results for casework are recorded in the Analyst's case notes. Added Specific information for controls such as reactionary substance or expected results are found in the PROCESSING WORK INSTRUCTIONS appendix in this manual. A control sample "Color change" listed in the PROCESSING WORK INSTRUCTIONS appendix is a transformation from the initial substrate hue. Example – from white paper (initial) to purple color for ninhydrin (positive result).	App. B	Under **AMIDO BLACK** Added **ControlTesting** Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on glass slide Positive results – purple, blue, black color change Negative results – no color change Under **CYANOACRYLATE** Added **ControlTesting** Reactionary substance: latent print on glass slide or clear plastic Positive results – white/off-white film Negative results – lack white/off-white film Under **DFO (1, 8 – DIAZAFLUOREN – 9 – ONE)** Added **Control Testing** Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on porous white paper Positive results – (visual; optional) pinkish-orange, pink, orange; (ALS/Lasers) fluorescence (orange, red-orange due to filters) Negative results – (visual) no color change; (ALS/Lasers) no fluorescence Under **IND (1,2-INDANEDIONE)** Added **Control Testing** Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on porous white paper Positive results – (visual; optional) light/pale pink color; (ALS/lasers) fluorescence (orange due to filters) Negative results – (visual) no color change; (ALS/Lasers) no fluorescence

Changes from LP2012R0 to LP2012R1	
11R0 Page	Change effective 07/01/2012
App. B	Under **NINHYDRIN** Added **ControlTesting** Reactionary substance: synthetic blood (Sirchie catalog No. SYNB8) on porous white paper Positive results – purple, pink, black color change Negative results – no color change Under **PHYSICAL DEVELOPER** Added **ControlTesting** Reactionary substance: latent print on porous white paper Positive results – grey/black color change Negative results – no color change Under **RHODAMINE 6G ……..** Added **ControlTesting** Reactionary substance: cyanoacrylate print on glass slide or clear plastic Positive results – fluorescence (orange due to filters) Negative results – no fluorescence